

# Influencer Detection Between Sectors Via Sparse Network Analysis

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When financial market participants expect that news relating to a company are representative for other companies within the same sector, then the performance of that company on the markets is expected to drive the other assets performance as well. Such situations often arise during earning announcement season. In this paper, we introduce a Sparse Network Model (SNM) to identify the influential assets within sectors. Often sectors comprise of a large number of assets relating to the issue of high dimensionality. Naturally not all assets within a sector are expected to impact the performance of others, hence often a sparse underlying structure arises. Sparse estimation techniques are often applied to uncover such structures. When particular structures like groups or blocks are part of the network, then a tailored estimator commonly provides a more accurate estimation. As such we introduce an estimator to detect influencers in asset networks. The methodology is flexible as such it extends various sparsity estimation techniques towards detecting influencers when they are present. We study the asymptotic properties of the estimator and validate its performance in extensive synthetic data experiments. We study the impact of assets on others within the sectors of the S&P100. We illustrate which companies are most influential for the sector and document the dynamics in the influencer structure over time.

Keywords: high-dimensional, network-modelling, sparsity